

(FILE 'USPAT' ENTERED AT 09:15:08 ON 06 JUL 1997)

E HARTIG, KLAUS/IN

L1 33 S E3-E4
E LARSON, STEVE/IN
L2 2 S E7
E LINGLE, PHILIP/IN
L3 10 S E4
L4 34 S L1 OR L2 OR L3
L5 4 S L4 AND STAINLESS
L6 0 S SI.SUB3 N.SUB.4
L7 10022 S SI.SUB.3 N.SUB.4
L8 7 S L7 AND L4
L9 2488 S (E GLASS) OR E-GLASS
L10 42 S L9 AND L7
L11 17 S L10 AND STAINLESS
L12 3181 S (LOW E) OR LOW-E
L13 30 S L7 AND L12

=> d 15

15. 5,279,722, Jan. 18, 1994, Method for manufacturing panes with high transmissivity in the visible range of the spectrum and with high reflectivity for thermal radiation; Joachim Szczyrbowski, et al., 204/192.27, 192.26 [IMAGE AVAILABLE]

=>

=> e hartig, klaus/in

E#	FILE	FREQUENCY	TERM
--	----	-----	----
E1	USPAT	2	HARTIG, KENT/IN
E2	USPAT	1	HARTIG, KENT H/IN
E3	USPAT	24 -->	HARTIG, KLAUS/IN
E4	USPAT	9	HARTIG, KLAUS W/IN
E5	USPAT	7	HARTIG, MARTVAL J/IN
E6	USPAT	2	HARTIG, MARTVAL JOHN/IN
E7	USPAT	1	HARTIG, NORMAN F/IN
E8	USPAT	9	HARTIG, PAUL R/IN
E9	USPAT	1	HARTIG, PETER/IN
E10	USPAT	4	HARTIG, R GEORGE/IN
E11	USPAT	3	HARTIG, RUFUS G/IN
E12	USPAT	1	HARTIG, STEFAN/IN

=> s e3-e4

24 "HARTIG, KLAUS"/IN

9 "HARTIG, KLAUS W"/IN

L1 33 ("HARTIG, KLAUS"/IN OR "HARTIG, KLAUS W"/IN)

=> e larsen, steve/in

E#	FILE	FREQUENCY	TERM
--	----	-----	----
E1	USPAT	1	LARSON, STEPHEN F/IN
E2	USPAT	1	LARSON, STEPHEN R/IN
E3	USPAT	0 -->	LARSON, STEVE/IN
E4	USPAT	2	LARSON, STEVE A/IN
E5	USPAT	1	LARSON, STEVEN C/IN
E6	USPAT	1	LARSON, STEVEN D/IN
E7	USPAT	2	LARSON, STEVEN L/IN
E8	USPAT	2	LARSON, STEVEN M/IN
E9	USPAT	1	LARSON, SUSAN L/IN
E10	USPAT	1	LARSON, SVEN A/IN
E11	USPAT	1	LARSON, TED/IN
E12	USPAT	1	LARSON, TERRY G/IN

=> s e7

L2 2 "LARSON, STEVEN L"/IN

=> e lingle, philip/in

E#	FILE	FREQUENCY	TERM
--	----	-----	----
E1	USPAT	1	LINGLE, JOHN E/IN
E2	USPAT	1	LINGLE, MARK W/IN
E3	USPAT	0 -->	LINGLE, PHILIP/IN
E4	USPAT	10	LINGLE, PHILIP J/IN
E5	USPAT	1	LINGLE, THOMAS A/IN
E6	USPAT	6	LINGLE, THOMAS M/IN
E7	USPAT	1	LINGLEY, HOWARD R/IN

E8	USPAT	2	LINGLEY, RICHARD C/IN
E9	USPAT	1	LINGLEY, RONALD/IN
E10	USPAT	1	LINGMANN, HERBERT/IN
E11	USPAT	1	LINGMANN, TERRY R/IN
E12	USPAT	3	LINGNAU, HORST/IN

=> s e4

L3 10 "LINGLE, PHILIP J"/IN

=> s l1 or l2 or l3

L4 34 L1 OR L2 OR L3

=> d 1-34

①. 5,584,902, Dec. 17, 1996, Method of converting coated glass; **Klaus W. Hartig**, et al., 65/32.4, 60.2, 106, 114; 204/192.26, 192.27 [IMAGE AVAILABLE]

②. 5,557,462, Sep. 17, 1996, Dual silver layer Low-E glass coating system and insulating glass units made therefrom; **Klaus W. Hartig**, et al., 359/585, 580, 588 [IMAGE AVAILABLE]

③. 5,514,476, May 7, 1996, Low-E glass coating system and insulating glass units made therefrom; **Klaus W. Hartig**, et al., 428/426; 359/360; 428/432, 622, 623, 627, 630 [IMAGE AVAILABLE]

4. 5,427,665, Jun. 27, 1995, Process and apparatus for reactive coating of a substrate; **Klaus Hartig**, et al., 204/192.12, 192.15, 192.23, 298.07, 298.11, 298.14, 298.19, 298.2, 298.21, 298.22 [IMAGE AVAILABLE]

⑤. 5,425,861, Jun. 20, 1995, Method of making high performance, durable, low-e glass; **Klaus W. Hartig**, et al., 204/192.26, 192.15, 192.23, 192.27, 192.28 [IMAGE AVAILABLE]

6. 5,403,458, Apr. 4, 1995, Sputter-coating target and method of use; **Klaus W. Hartig**, et al., 204/192.15, 192.16, 192.23, 192.26, 298.12, 298.13, 298.14, 298.22 [IMAGE AVAILABLE]

7. 5,382,126, Jan. 17, 1995, Multichamber coating apparatus; **Klaus Hartig**, et al., 414/217; 118/719, 729; 204/298.25 [IMAGE AVAILABLE]

⑧. 5,376,455, Dec. 27, 1994, Heat-treatment convertible coated glass and method of converting same; **Klaus W. Hartig**, et al., 428/428, 336, 432, 448, 450, 472, 622, 627, 630, 673, 680, 689, 698, 699 [IMAGE AVAILABLE]

9. 5,364,518, Nov. 15, 1994, Magnetron cathode for a rotating target; **Klaus Hartig**, et al., 204/298.22, 192.12, 298.21 [IMAGE AVAILABLE]

⑩. 5,344,718, Sep. 6, 1994, High performance, durable, low-E glass;

****Klaus W. Hartig****, et al., 428/623; 359/360; 428/622, 627, 630 [IMAGE AVAILABLE]

11. 5,340,454, Aug. 23, 1994, Method and apparatus for the coating of substrates; Christian Schaefer, et al., 204/192.12, 298.25, 298.26, 298.27 [IMAGE AVAILABLE]

12. 5,298,048, Mar. 29, 1994, Heat treatable sputter-coated glass systems; ****Philip J. Lingle****, et al., 65/60.2, 60.4, 60.5, 104; 204/192.26, 192.27; 428/216 [IMAGE AVAILABLE]

13. 5,264,099, Nov. 23, 1993, Method for producing an opaque substrate; Joachim Szczyrbowski, et al., 204/192.27, 192.15, 192.28 [IMAGE AVAILABLE]

14. 5,262,032, Nov. 16, 1993, Sputtering apparatus with rotating target and target cooling; ****Klaus Hartig****, et al., 204/298.21, 192.12, 298.09, 298.22 [IMAGE AVAILABLE]

15. 5,242,560, Sep. 7, 1993, Heat treatable sputter-coated glass; ****Philip J. Lingle****, et al., 204/192.27, 192.26; 427/163.1 [IMAGE AVAILABLE]

16. 5,229,194, Jul. 20, 1993, Heat treatable sputter-coated glass systems; ****Philip J. Lingle****, et al., 428/216; 204/192.26, 192.27; 359/359, 580; 428/432, 433, 472, 698, 699, 701, 702, 913 [IMAGE AVAILABLE]

17. 5,216,542, Jun. 1, 1993, Coating, composed of an optically effective layer system, for substrates, whereby the layer system has a high anti-reflective effect, and method for the manufacturing of the coating; Joachim Szczyrbowski, et al., 359/588; 204/192.26; 359/585, 586, 590; 427/166 [IMAGE AVAILABLE]

18. 5,213,672, May 25, 1993, Sputtering apparatus with a rotating target; ****Klaus Hartig****, et al., 204/298.22, 298.06, 298.11 [IMAGE AVAILABLE]

19. 5,201,926, Apr. 13, 1993, Method for the production of coated glass with a high transmissivity in the visible spectral range and with a high reflectivity for thermal radiation; Joachim Szczyrbowski, et al., 65/60.2, 60.4, 60.8, 102; 204/192.27; 427/109, 165 [IMAGE AVAILABLE]

20. 5,170,291, Dec. 8, 1992, Coating, composed of an optically effective layer system, for substrates, whereby the layer system has a high anti-reflective effect, and method for manufacturing the coating; Joachim Szczyrbowski, et al., 359/580, 586, 588; 427/166 [IMAGE AVAILABLE]

21. 5,090,984, Feb. 25, 1992, Method for producing glass of high transmission in the visible spectral range and low solar energy transmission; Joachim Szczyrkowski, et al., 65/60.2, 60.5; 204/192.28, 192.29 [IMAGE AVAILABLE]

22. 5,071,535, Dec. 10, 1991, Cathode sputtering device; **Klaus Hartig**, et al., 204/298.09, 298.12 [IMAGE AVAILABLE]

23. 5,021,139, Jun. 4, 1991, Cathode sputtering apparatus; **Klaus Hartig**, et al., 204/298.09, 298.19 [IMAGE AVAILABLE]

24. 5,011,745, Apr. 30, 1991, Glazing having contact strips on a substrate; Anton Dietrich, et al., 428/630; 219/522, 547; 428/38, 195, 209, 210, 426, 428, 432, 433, 632, 689, 701 [IMAGE AVAILABLE]

25. 4,990,234, Feb. 5, 1991, Process for coating substrates made of a transparent material, for example floatglass; Joachim Szczyrkowski, et al., 204/192.23, 192.26 [IMAGE AVAILABLE]

26. 4,946,576, Aug. 7, 1990, Apparatus for the application of thin layers to a substrate; Anton Dietrich, et al., 204/298.06, 192.12, 298.07, 298.08, 298.11, 298.14, 298.16, 298.19, 298.23, 298.24 [IMAGE AVAILABLE]

27. 4,919,778, Apr. 24, 1990, Process for the production of curve glazing with a high transmittance in the visible spectral range and a high reflectance for thermal radiation; Anton Dietrich, et al., 204/192.27; 65/106; 204/192.15, 192.26 [IMAGE AVAILABLE]

28. 4,885,070, Dec. 5, 1989, Method and apparatus for the application of materials; Gregor A. Campbell, et al., 204/298.06, 192.12, 298.04, 298.05, 298.12, 298.16, 298.18, 298.24 [IMAGE AVAILABLE]

29. 4,863,756, Sep. 5, 1989, Method and equipment for coating substrates by means of a plasma discharge using a system of magnets to confine the plasma; **Klaus Hartig**, et al., 427/488; 118/718, 723E; 427/571 [IMAGE AVAILABLE]

30. 4,830,876, May 16, 1989, Process for producing contact strips on substrates, especially on glazing; Anton Dietrich, et al., 427/96, 126.2, 126.3, 269, 286, 287 [IMAGE AVAILABLE]

31. 4,828,872, May 9, 1989, Method and apparatus for the reactive vapor depositing of metal compounds; Volker Bauer, et al., 427/566; 118/723EB, 723VE, 726; 204/298.05; 427/531, 569, 576 [IMAGE AVAILABLE]

32.. 4,572,842, Feb. 25, 1986, Method and apparatus for reactive vapor deposition of compounds of metal and semi-conductors; Anton Dietrich, et al., 427/571; 118/50.1, 623, 719, 726; 204/192.25, 298.07; 427/570 [IMAGE AVAILABLE]

33. 4,548,691, Oct. 22, 1985, Thermally insulating glazing; Anton Dietrich, et al., 204/192.27, 192.29; 359/360; 427/160, 166 [IMAGE AVAILABLE]

34. 4,534,841, Aug. 13, 1985, Solar controlled glazing and method of producing glazing; **Klaus Hartig**, et al., 204/192.26, 192.27; 428/426, 436 [IMAGE AVAILABLE]

=>

=> d history

(FILE 'USPAT' ENTERED AT 09:15:08 ON 06 JUL 1997)

E HARTIG, KLAUS/IN

L1 33 S E3-E4
E LARSON, STEVE/IN
L2 2 S E7
E LINGLE, PHILIP/IN
L3 10 S E4
L4 34 S L1 OR L2 OR L3
L5 4 S L4 AND STAINLESS
L6 0 S SI.SUB3 N.SUB.4
L7 10022 S SI.SUB.3 N.SUB.4
L8 7 S L7 AND L4
L9 2488 S (E GLASS) OR E-GLASS
L10 42 S L9 AND L7
L11 17 S L10 AND STAINLESS
L12 3181 S (LOW E) OR LOW-E
L13 30 S L7 AND L12
L14 2 S L13 AND STAINLESS

=>

=> d history

(FILE 'USPAT' ENTERED AT 09:15:08 ON 06 JUL 1997)

E HARTIG, KLAUS/IN

L1 33 S E3-E4
E LARSON, STEVE/IN
L2 2 S E7
E LINGLE, PHILIP/IN
L3 10 S E4
L4 34 S L1 OR L2 OR L3
L5 4 S L4 AND STAINLESS
L6 0 S SI.SUB3 N.SUB.4
L7 10022 S SI.SUB.3 N.SUB.4
L8 7 S L7 AND L4

=> d 1-7

1. 5,584,902, Dec. 17, 1996, Method of converting coated glass; **Klaus W. Hartig**, et al., 65/32.4, 60.2, 106, 114; 204/192.26, 192.27 [IMAGE AVAILABLE]

2. 5,557,462, Sep. 17, 1996, Dual silver layer Low-E glass coating system and insulating glass units made therefrom; **Klaus W. Hartig**, et al., 359/585, 580, 588 [IMAGE AVAILABLE]

~~3.~~ 5,514,476, May 7, 1996, Low-E glass coating system and insulating glass units made therefrom; **Klaus W. Hartig**, et al., 428/426; 359/360; 428/432, 622, 623, 627, 630 [IMAGE AVAILABLE]

4. 5,425,861, Jun. 20, 1995, Method of making high performance, durable, low-e glass; **Klaus W. Hartig**, et al., 204/192.26, 192.15, 192.23, 192.27, 192.28 [IMAGE AVAILABLE]

~~5.~~ 5,403,458, Apr. 4, 1995, Sputter-coating target and method of use; **Klaus W. Hartig**, et al., 204/192.15, 192.16, 192.23, 192.26, 298.12, 298.13, 298.14, 298.22 [IMAGE AVAILABLE]

~~6.~~ 5,376,455, Dec. 27, 1994, Heat-treatment convertible coated glass and method of converting same; **Klaus W. Hartig**, et al., 428/428, 336, 432, 448, 450, 472, 622, 627, 630, 673, 680, 689, 698, 699 [IMAGE AVAILABLE]

7. 5,344,718, Sep. 6, 1994, High performance, durable, low-E glass; **Klaus W. Hartig**, et al., 428/423; 359/360; 428/622, 627, 630 [IMAGE AVAILABLE]

=>

*

=> e hartig, klaus/in

E#	FILE	FREQUENCY	TERM
--	----	-----	----
E1	USPAT	2	HARTIG, KENT/IN
E2	USPAT	1	HARTIG, KENT H/IN
E3	USPAT	24 -->	HARTIG, KLAUS/IN
E4	USPAT	9	HARTIG, KLAUS W/IN
E5	USPAT	7	HARTIG, MARTVAL J/IN
E6	USPAT	2	HARTIG, MARTVAL JOHN/IN
E7	USPAT	1	HARTIG, NORMAN F/IN
E8	USPAT	8	HARTIG, PAUL R/IN
E9	USPAT	1	HARTIG, PETER/IN
E10	USPAT	4	HARTIG, R GEORGE/IN
E11	USPAT	3	HARTIG, RUFUS G/IN
E12	USPAT	1	HARTIG, STEFAN/IN

=> s e3 or e4

24 "HARTIG, KLAUS"/IN

9 "HARTIG, KLAUS W"/IN

L1 33 "HARTIG, KLAUS"/IN OR "HARTIG, KLAUS W"/IN

=> d 1-33

1. 5,584,902, Dec. 17, 1996, Method of converting coated glass; **Klaus W. Hartig**, et al., 65/32.4, 60.2, 106, 114; 204/192.26 [IMAGE AVAILABLE]

2. 5,557,462, Sep. 17, 1996, Dual silver layer Low-E glass coating system and insulating glass units made therefrom; **Klaus W. Hartig**, et al., 359/585, 580, 588 [IMAGE AVAILABLE]

3. 5,514,476, May 7, 1996, Low-E glass coating system and insulating glass units made therefrom; **Klaus W. Hartig**, et al., 428/426; 359/360; 428/432, 622, 623, 627, 630 [IMAGE AVAILABLE]

4. 5,427,665, Jun. 27, 1995, Process and apparatus for reactive coating of a substrate; **Klaus Hartig**, et al., 204/192.12, 192.15, 192.23, 298.07, 298.11, 298.14, 298.19, 298.2, 298.21, 298.22 [IMAGE AVAILABLE]

5. 5,425,861, Jun. 20, 1995, Method of making high performance, durable, low-e glass; **Klaus W. Hartig**, et al., 204/192.26, 192.15, 192.23, 192.27, 192.28 [IMAGE AVAILABLE]

6. 5,403,458, Apr. 4, 1995, Sputter-coating target and method of use; **Klaus W. Hartig**, et al., 204/192.15, 192.16, 192.23, 192.26, 298.12, 298.13, 298.14, 298.22 [IMAGE AVAILABLE]

7. 5,382,126, Jan. 17, 1995, Multichamber coating apparatus; **Klaus

Hartig**, et al., 414/217; 118/719, 729; 204/298.25 [IMAGE AVAILABLE]

8. 5,376,455, Dec. 27, 1994, Heat-treatment convertible coated glass and method of converting same; **Klaus W. Hartig**, et al., 428/428, 336, 432, 448, 450, 472, 622, 627, 630, 673, 680, 689, 698, 699 [IMAGE AVAILABLE]

9. 5,364,518, Nov. 15, 1994, Magnetron cathode for a rotating target; **Klaus Hartig**, et al., 204/298.22, 192.12, 298.21 [IMAGE AVAILABLE]

10. ~~5,344,718~~, Sep. 6, 1994, High performance, durable, low-E glass; **Klaus W. Hartig**, et al., 428/623; 359/360; 428/622, 627, 630 [IMAGE AVAILABLE]

11. 5,340,454, Aug. 23, 1994, Method and apparatus for the coating of substrates; Christian Schaefer, et al., 204/192.12, 298.25, 298.26, 298.27 [IMAGE AVAILABLE]

12. 5,298,048, Mar. 29, 1994, Heat treatable sputter-coated glass systems; Philip J. Lingle, et al., 65/60.2, 60.4, 60.5, 104; 204/192.26, 192.27; 428/216 [IMAGE AVAILABLE]

13. 5,264,099, Nov. 23, 1993, Method for producing an opaque substrate; Joachim Szczyrbowski, et al., 204/192.27, 192.15, 192.28 [IMAGE AVAILABLE]

14. 5,262,032, Nov. 16, 1993, Sputtering apparatus with rotating target and target cooling; **Klaus Hartig**, et al., 204/298.21, 192.12, 298.09, 298.22 [IMAGE AVAILABLE]

15. ~~5,229,194~~, Jul. 20, 1993, Heat treatable sputter-coated glass systems; Philip J. Lingle, et al., 428/216; 204/192.26, 192.27; 359/359, 580; 428/432, 433, 472, 698, 699, 701, 702, 913 [IMAGE AVAILABLE]

16. 5,216,542, Jun. 1, 1993, Coating, composed of an optically effective layer system, for substrates, whereby the layer system has a high anti-reflective effect, and method for the manufacturing of the coating; Joachim Szczyrbowski, et al., 359/588, 585, 586, 590; 427/166 [IMAGE AVAILABLE]

17. 5,213,672, May 25, 1993, Sputtering apparatus with a rotating target; **Klaus Hartig**, et al., 204/298.22, 298.06, 298.11 [IMAGE AVAILABLE]

18. 5,201,926, Apr. 13, 1993, Method for the production of coated glass with a high transmissivity in the visible spectral range and with a high reflectivity for thermal radiation; Joachim Szczyrbowski, et al.,

65/60.2, 60.4, 60.8, 102; 204/192.27; 427/109, 165 [IMAGE AVAILABLE]

19. 5,170,291, Dec. 8, 1992, Coating, composed of an optically effective layer system, for substrates, whereby the layer system has a high anti-reflective effect, and method for manufacturing the coating; Joachim Szczyrbowski, et al., 359/580, 586, 588; 427/166 [IMAGE AVAILABLE]

20. 5,090,984, Feb. 25, 1992, Method for producing glass of high transmission in the visible spectral range and low solar energy transmission; Joachim Szczyrbowski, et al., 65/60.2, 60.5; 204/192.28, 192.29 [IMAGE AVAILABLE]

21. 5,071,535, Dec. 10, 1991, Cathode sputtering device; **Klaus Hartig**, et al., 204/298.09, 298.12 [IMAGE AVAILABLE]

22. 5,021,139, Jun. 4, 1991, Cathode sputtering apparatus; **Klaus Hartig**, et al., 204/298.09, 298.19 [IMAGE AVAILABLE]

23. 5,011,745, Apr. 30, 1991, Glazing having contact strips on a substrate; Anton Dietrich, et al., 428/630; 219/522, 547; 428/38, 195, 209, 210, 426, 428, 432, 433, 632, 689, 701 [IMAGE AVAILABLE]

24. 4,990,234, Feb. 5, 1991, Process for coating substrates made of a transparent material, for example floatglass; Joachim Szczyrbowski, et al., 204/192.23, 192.26 [IMAGE AVAILABLE]

25. 4,946,576, Aug. 7, 1990, Apparatus for the application of thin layers to a substrate; Anton Dietrich, et al., 204/298.06, 192.12, 298.07, 298.08, 298.11, 298.14, 298.16, 298.19, 298.23, 298.24 [IMAGE AVAILABLE]

26. 4,919,778, Apr. 24, 1990, Process for the production of curve glazing with a high transmittance in the visible spectral range and a high reflectance for thermal radiation; Anton Dietrich, et al., 204/192.27; 65/106; 204/192.15, 192.26 [IMAGE AVAILABLE]

27. 4,885,070, Dec. 5, 1989, Method and apparatus for the application of materials; Gregor A. Campbell, et al., 204/298.06, 192.12, 298.04, 298.05, 298.12, 298.16, 298.18, 298.24 [IMAGE AVAILABLE]

28. 4,863,756, Sep. 5, 1989, Method and equipment for coating substrates by means of a plasma discharge using a system of magnets to confine the plasma; **Klaus Hartig**, et al., 427/488; 118/718, 723E; 427/571 [IMAGE AVAILABLE]

29. 4,830,876, May 16, 1989, Process for producing contact strips on substrates, especially on glazing; Anton Dietrich, et al., 427/96, 126.2,

126.3, 269, 286, 287 [IMAGE AVAILABLE]

30. 4,828,872, May 9, 1989, Method and apparatus for the reactive vapor depositing of metal compounds; Volker Bauer, et al., 427/566; 118/723EB, 723VE, 726; 204/298.05; 427/531, 569, 576 [IMAGE AVAILABLE]

31. 4,572,842, Feb. 25, 1986, Method and apparatus for reactive vapor deposition of compounds of metal and semi-conductors; Anton Dietrich, et al., 427/571; 118/50.1, 623, 719, 726; 204/192.25, 298.07; 427/570 [IMAGE AVAILABLE]

32. 4,548,691, Oct. 22, 1985, Thermally insulating glazing; Anton Dietrich, et al., 204/192.27, 192.29; 359/360; 427/160, 166 [IMAGE AVAILABLE]

33. 4,534,841, Aug. 13, 1985, Solar controlled glazing and method of producing glazing; **Klaus Hartig**, et al., 204/192.26, 192.27; 428/426, 436 [IMAGE AVAILABLE]

=> d 1-33 clms